

## **REMARKS**

In the Office Action mailed January 8, 2008, the Examiner (1) rejected claims 22 and 24 under 35 U.S.C. § 101 as being directed to non-statutory subject matter, (2) rejected claims 1, 2-4, 14 and 26 under 35 U.S.C. § 102(b) as being anticipated by Glance et al., "One-THz Digital Random Access High Resolution Optical Frequency Synthesizer Providing Cold-Start Operation From A Frequency Reference" (referred to herein as "Glance"), and (3) rejected claims 5 and 18 under 35 U.S.C. § 103(a) as being unpatentable over Glance. The Examiner also objected to claims 6-13, 15-17, 19-21, 23 and 25 as being dependent upon a rejected base claim, but stated that these claims would be allowable if rewritten in independent form including all of the limitations of the base claim and any intervening claims. Applicants thank the Examiner for indicating the allowable subject matter.

### **1. Status of the Claims**

Currently pending are claims 1-5, 7-18, 20-21, and 26-28 of which claims 1, 18, 26, 27, and 28 are independent and the remainder are dependent. Applicants have amended claims 1, 5, 7, 17-18, 20, and 26 in order to expedite allowance. Further, Applicants have cancelled claims 6, 19, and 22-25 without prejudice, and reserve the right to pursue the subject matter of these claims in a continuing application. Applicants have also added new claims 27 and 28, which Applicants submit contain no new subject matter.

### **2. Response to 35 U.S.C. § 101 Rejection**

As noted, the Examiner rejected claims 22 and 24 under 35 U.S.C. § 101 as being directed to non-statutory subject matter. Applicants have now cancelled claims 22 and 24. Therefore, this

rejection under § 101 is now moot. Accordingly, Applicants request that the § 101 rejection be withdrawn.

### **3. Response to Claim Objections and Rejections Under 35 U.S.C. §§ 102-103**

#### **A. Claims 1-5, 7-18, 20-21, and 26**

Applicants have cancelled claims 6, 19, and 22-25. Therefore, the § 102 and § 103 rejections of claims 22 and 24 are moot.

In response to the Examiner's objection to claims 6-13 and 15-17, Applicants have amended independent claim 1 to include all of the limitations of claim 6, and Applicants have cancelled claim 6. As a result, claim 1 now recites the subject matter of claim 6 that the Examiner indicated would be allowable. Claim 1 is thus now in condition for allowance.

Claims 2-5 and 7-17 all depend ultimately from claim 1 and are thus allowable for at least the same reasons that claim 1 is allowable.

In response to the Examiner's objection to claims 19-21, 23 and 25, Applicants have amended independent claim 18 to include all of the limitations of claim 19, and Applicants have cancelled claim 19. As a result, claim 18 now recites the subject matter of claim 19 that the Examiner indicated would be allowable. Claim 19 is thus now in condition for allowance.

Claims 20 and 21 depend ultimately from claim 18 and are thus allowable for at least the same reasons that claim 18 is allowable.

In response to the Examiner's rejections of independent claim 26, Applicants have amended claim 26 to include means for performing the subject matter of claim 6. As a result claim 26 now recites various means for performing the subject matter of claim 6, which the Examiner indicated

would be allowable. Therefore, Applicants submit that claim 26 is allowable for the same reasons that claim 1 is now allowable.

Applicants submit that claims 1-5, 7-18, 20-21, and 26 are new, non-obvious, and allowable. Accordingly, Applicants request the § 102(b) and § 103(a) rejections be withdrawn. By making the amendments noted above, Applicants do not acquiesce in the claim rejections. However, Applicants have made the claim amendments without prejudice in order to expedite prosecution.

### **B. New Claim 27**

New Independent claim 27 teaches a system comprising data storage, a processor, and program code stored in the data storage and executable by the processor to carry out the functionality that is the subject matter of original claim 6 (i.e., amended claim 1), which the Examiner indicated would be allowable. Thus, Applicants submit that claim 27 is allowable for at least the reasons that amended claim 1 is allowable.

For at least the foregoing reasons, Applicants respectfully submit that claim 28 is new, non-obvious, and allowable.

### **C. New Claim 28**

New independent claim 28 incorporates the limitations of original claims 1, 4, and 5. As noted the Examiner rejected claims 1, 4 and 5 under both 35 U.S.C. § 102(b) and 35 U.S.C. § 103(a) in view of Glance. Specifically, the Examiner states that Glance et al, discloses (1) regions of continuous tuning that overlap on either side with previous and next continuous tuning regions and (2) using resonance peaks to mark when to go from one region to another. The Examiner asserted that while Glance does not disclose a control signal being turned on and off to denote a continuous region

and a lookup table to store tuning values, that these two features were obvious to one skilled in the art.

Applicant submits that Glance does not disclose or make obvious the teachings of Claim 28 for at least the reason that Glance does not teach or suggest stitching two or more regions to one another so as to form a usable tuning data set, where this step involves repeatedly: asserting a control signal to denote a continuous region when the first resonance peak is detected and then de-asserting the control signal and jumping to the next continuous tuning region when the next resonance peak is found within this continuous tuning region.

Claim 28 involves using continuous tuning regions that overlap each other and resonance peaks that denote the beginning and end of each region. When jumping to the next tuning region, the laser is tuned over the resonance peaks at both the beginning and end of the curve (as steps b. and c. are repeated). Since the method of claim 28 involves sweeping a laser over a beginning and ending resonance peak, the method helps to provide more accurate starting and ending frequency markers and to give more accurate wavelength sweeps. See Specification at p. 17 (“The wavelength reference used allows exact wavelength calibration of the sweep”), p. 20 (starting with “Once a series of these continuous sweeps has been identified...”).

Glance, at best, describes how to calibrate a laser over the full wavelength range of the laser, and therefore does not provide the confidence in frequency accuracy of claim 28. Since Glance does not require sampling a resonance peak after jumping onto the second tuning curve, the starting frequency on that curve is not known with a high degree of accuracy. By contrast, in the method of new Claim 28, the laser has beginning and ending frequency markers to confirm that the laser has swept between the two points.

For at least the foregoing reasons, Applicants respectfully submit that claim 28 is new, non-obvious, and allowable.

#### **4. Conclusion**

For the foregoing reasons, Applicants submit that all of the pending claims are now in condition for allowance, and thus Applicants respectfully request notice to that effect. Should the Examiner wish to discuss any aspect of this application, the Examiner is welcome to call the undersigned at (312) 913-3341.

Respectfully submitted,

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